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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,100	08/10/2000	Mary Dominique O'Neill	99W075	6344

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EXAMINER

SPEARS, ERIC J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,100

Applicant(s)

O'NEILL ET AL.

Examiner

Eric J Spears

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-16, 18, 19 is/are allowed.
- 6) ☒ Claim(s) 1-5, 17 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

The indicated allowability of claims 1-5 is withdrawn in view of the newly discovered reference(s) to Sanghera et al. (6,175,678) and Lundin (6,618,530).

Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 17 and 20 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanghera et al. (6,175,678) in view of Harootian (5,303,373).

Regarding Claim 1, Sanghera teaches a directing light from a fiber optic bundle and lens system to an infrared image sensor (See Fig. 2, abstract). Harootian teaches a bundle of optical fibers wherein each fiber changes in size and shape from one end to the other (See Figs 2a, 2b; See abstract). Harootian also teaches coupling the bundle to devices such as CCDs or lens elements and that the exact choice of devices connected thereto is uncritical. Therefore, it would have been obvious to one of ordinary skill in the art to provide the a fiber bundle as taught by Harootian between a lens train and an imager, as an obvious design choice given the teachings of Harootian, in order to better accommodate the fiber ends to an image sensor pixel shape.

Further regarding Claim 1, the precise ordering of the optical fibers is an obvious design choice to send light from individual fibers to a given location. Therefore, it would have been obvious to one of ordinary skill in the art to provide for the scene energy to be mapped nonlinearly on the a detector.

Regarding Claim 2, the modified device of Sanghera teaches a color filter 208.

Regarding Claim 3, the modified device of Sanghera (Harootian) teaches a bundle tapered between and rectangle and a square.

Regarding Claim 4, the modified device of Sanghera (Harootian) teaches one end larger than the other (Fig. 2a, 2b). The choice of input and output would have been obvious to one of ordinary skill in the art as an obvious design choice.

Regarding Claims 5, the use of image processing electronic is well known in the art to process images from detectors and to provide such electronics would have been obvious to one of ordinary skill in the art.

Regarding Claims 17 and 20, Sanghera teaches a directing light from a fiber optic bundle and lens system to an infrared image sensor (See Fig. 2, abstract). Harootian teaches a bundle of optical fibers wherein each fiber changes in size and shape from one end to the other (See Figs 2a, 2b; See abstract). Harootian also teaches coupling the bundle to devices such as CCDs or lens elements and that the exact choice of devices connected thereto is uncritical. Therefore, it would have been obvious to one of ordinary skill in the art to provide the a fiber bundle as taught by Harootian between a lens train and an imager, as an obvious design choice given the

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teachings of Harootian, in order to better accommodate the fiber ends to an image sensor pixel shape.

Regarding Claim 20, Harootian teaches a bundle tapered between and rectangle and a square. The precise use of a given end as the input would be an obvious design choice to one of ordinary skill in the art, in order to provide a better choice for a given application.

Allowable Subject Matter

Claims 7-16, 18 and 19 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding Claim 7, the prior art of record fails to teach or reasonably suggest a sensor system comprising, in addition to the other related features of the claim, the two subsystems with different color filters as recited in claim 7.

Regarding Claim 15, the prior art of record fails to teach or reasonably suggest a sensor system comprising, in addition to the other related features of the claim, the two subsystems with different color filters as recited in claim 15.

Regarding Claim 16, the prior art of record fails to teach or reasonably suggest a sensor system comprising, in addition to the other related features of the claim, the two subsystems with different color filters as recited in claim 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lundin (6,618,530) teaches a tapered optical fiber with shape changing optical fibers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Spears whose telephone number is (703) 306-0033. The examiner can normally be reached on Monday-Friday from 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

EJS
09/23/03


Que T. Le
Primary Examiner